

Remarks

Claims 1, 10, and 12 have been amended in order to place them in better condition for allowance, or in the alternative, for consideration on appeal. Upon entry of the amendment, claims 1-20 will be pending and in condition for allowance. The amendment raises no new issues, nor would it entail the need for further search on the part of the Examiner. Entry of the amendment is within the discretion of the Examiner and is respectfully requested.

The rejection under Section 103 is respectfully traversed.

In an effort to facilitate the prosecution of the present application, Applicant has amended the claims to provide further focus on a key distinction between the device of the present invention, and that described in Van Brunt. By way of background, Applicant can represent, and if need be confirm, that the "Model 103" device described in the background of the present invention, is itself based on and synonymous with the Van Brunt device presently cited by the Examiner. Hence the discussion below and in the application regarding either Van Brunt or Model 103, can be assumed, for present purposes, to describe the same device.

In turn, the difference between the wave forms produced by a device of the present invention and one of Van Brunt/Model 103 is depicted in Figures 3a and 3b, respectively, of the present specification, showing comparative wave forms at 6Hz. It can be seen that the wave form of this invention is in the form a fast rise, i.e., triangular, sine wave. More significantly, and by virtue of the rotating blade, this wave form is achieved at *any frequency* within the range of preferred frequencies described in the specification (i.e., between 6 and 15 Hz).

This can be compared to the slow (rounded) rise of the wave form (Figure 3b) provided at lower frequencies by the Van Brunt/Model 103 device. Given the nature of the Van Brunt/Model 103 device, and by contrast to that of the present invention, the sharpness of its pulse wave form is related to the frequency at which it is used. In other words, the wave form will have a slow rise (as shown) at lower frequencies within the desired range, and will become more triangular only at higher, and typically less desirable, therapeutic frequencies.

The effectiveness of a chest compression apparatus involves consideration of at least three variables - the *pulse wave form* (here, for instance, rounded or triangular) representing the rate at which air moves into and out of the lungs, the *frequency* with which those pulses are applied, and the *volume* of air that is moved into and out of the lungs per pulse.

Both the frequency and volume of air are related, by virtue of the lung's own anatomy. Lower frequencies within the range of 6 to 15 Hz tend to produce the largest air volume per pulse, since the lungs are better able to reinflate between pulses. By contrast, at any particular frequency (or in turn, volume), the rate of air movement into and out of the lungs is largely a function of the pulse wave form, with triangular pulses providing faster air movement than rounded ones.

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An optimal device is one that provides *both* a high rate of air movement, akin to a coughing or huffing action, together with a high volume of air per pulse. A higher rate of air movement serves to more effectively shear mucus from the lungs, while the higher volume of air movement services to remove the sheared mucus from the lungs.

By virtue of its ability to achieve triangular wave forms at any desired frequency, a device of the present invention provides such an optimal combination of both a high rate and high volume of air flow. By contrast, the Van Brunt/Model 103 device can only achieve only one or the other of these key features, namely, it can achieve a high rate of air flow (if used at higher frequencies), albeit with lower air volumes, or it can achieve a high volume of air flow (if used at lower frequencies), albeit with the lower flow rates associated with rounded pulse wave forms - in a manner more akin to sighs than coughs. As a result, a device of this invention provides an impressive and unexpected approximate *20% improvement* in mucus removal at 6 Hz, as compared to that of the Van Brunt/Model 103 device (measured as grams of mucus expectorated per minute of therapy).

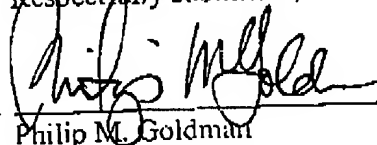
In view of the above remarks, it is submitted that the claims are in condition for allowance. Reconsideration and withdrawal of all rejections is respectfully requested.

The Commissioner is hereby authorized to charge any additional filing fees required to Deposit Account No. 061910.

Dated:

05 NOV 2003

Respectfully submitted,



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